

EXHIBIT F1

From: [McTiernan, Anne](#)
To: eccc.substances.eccc@canada.ca
Bcc: [McTiernan, Anne](#)
Subject: comment on Canada Gazette Part 1 December 8, 2018
Date: Tuesday, February 5, 2019 5:36:00 PM

Executive Director,
Program Development and Engagement Division
Department of the Environment
Gatineau Quebec K1A 0H3

Dear Sirs/Madams:

Re: Draft Screening Assessment – Talc; Chemical Abstracts Service Registry Number
14807-96-6, published in Canada Gazette, Part 1, December 8, 2018

Health Canada has performed an excellent assessment of the state of science regarding the role of use of talcum powder products and risk of ovarian cancer. The Draft Screening Assessment on Talc presents information on research in humans, animals, cells, as well as toxicological and pathological research. The assessment states, "The meta-analyses of the available human studies in the peer-reviewed literature indicate a consistent and statistically significant positive association between perineal exposure to talc and ovarian cancer. Further, available data are indicative of a causal effect." The assessment concludes, "Based on the available information, it is proposed that there is potential for harm to human health in Canada at current levels of exposure. Therefore, on the basis of the information presented in this draft screening assessment, it is proposed to conclude that talc meets the criteria under paragraph 64(c) of CEPA as it is entering or may enter the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health."

This conclusion agrees with my own: I conducted a systematic review and causation analysis of the association between use of talcum powder products in the genital/perineal area and risk of developing epithelial ovarian cancer. There have been 33 scientific publications from epidemiologic studies, as well as a pooled analysis and several meta-analyses that combined data across multiple studies. The meta-analyses consistently showed that women who have ever used talcum powder products in the genital/perineal area have a statistically significant 22 - 31% increased risk of developing epithelial ovarian cancer overall compared with women who reported never using these products. These comprehensive combined analyses also show strong evidence of increased risk of ovarian cancer with increasing number of estimated lifetime applications of talcum powder products in the perineal/genital area.

Laboratory and clinical studies on talc exposure and ovarian carcinogenesis have provided plausible evidence that talc can migrate from the perineum to the ovaries and that it can cause an inflammatory response. Elevated levels of inflammation (such as cytokines), as well as oxidative stress, are biologically plausible pathways by which talc can induce neoplastic change and cause ovarian cancer.

Given that use of talcum powder products in the genital/perineal area can cause ovarian cancer, Health Canada is right in taking the proposed actions to reduce exposure to these products in order to protect the health of Canadian women.

Sincerely,

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Fred Hutchinson Cancer Research Center
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University of Washington
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Disclosure: Dr. McTiernan has received consulting funds from legal firms representing plaintiffs in cases of ovarian cancer and talcum powder products.